THE BIOLOGY OF PARASITIC FLOWERING PLANTS by Job Kuijt, with pp. 246, figs. 187. University of California Press, 1969. £7.3 (U.K.).

Aside from Christmann's excellent little book, "Le parasitisme chez les plantes", there is no recent survey of angiospermous parasites. The present work is claimed to be a synthesis of virtually everything of significance that is known about this fascinating group of organisms. It does indeed provide a comprehensive and well documented account, encompassing such varied aspects as taxonomy, morphology, development, biology, physiology and even, in a most entertaining way, mythology.

Although the arrangement of this book is broadly systematic, there are separate chapters dealing with the haustorium, the physiology of parasitism and with possible lines of evolution of angiospermous parasites. An encyclopaedic work of this nature is always valuable in that it draws attention to what remains to be done. The reader will be impressed by what has been accomplished during the last fifteen years but will also be brought to realise how much more there remains to be discovered about the more interesting parasites of Southern Africa.

This book is written in a lively and provocative style and the author's extensive contributions and dynamic personality are much in evidence. There is a profusion of clear and beautifully executed illustrations and the general standard of production is of a very high order.

A. R. A. NOEL

CELL DIVISION AND HEREDITY by Roger Kemp, with pp. 47, figures 27, 4 plates and 15s. boards. The Institute of Biology's Studies in Biology No. 21. London: Edward Arnold, 1970. 9s. paperback.

It is to a large extent true that an understanding of the principles of Mendelism and of the mechanism of meiotic division enables one to pursue the study of genetics to quite an advanced level. Descriptions and analyses of Mendels' experiments are now widely available but discussions of the full significance of meiosis, apart from purely cytological features, are often rather summarily treated in elementary texts. This present work is therefore to be welcomed in that it establishes, in a simple and direct fashion, the central position of meiosis in the general scheme of genetic transmission. A further desirable innovation is that this relationship is based, wherever possible, on tetrad analysis in the fungi, a much more logical and easily demonstrated approach than is possible with the classical pea experiments. This book also includes sections on chromosomal mutations and breeding systems, the latter introducing the concept of population genetics and the mechanism of selection.

This book will be useful in the higher grades at school and in first year university courses.

A. R. A. NOEL

THE CUTICLES OF PLANTS by J. T. Martin and B. E. Juniper, with pp. xx + 347, with 78 line and half tone illustrations. London: Edward Arnold, 1970. £7.5.0.

The Authors and publishers are to be congratulated for having most successfully filled an outstanding gap in botanical literature. It would be difficult to find elsewhere such a comprehensive treatment of the cuticle and Martin and Juniper's book will certainly become the standard reference work on this much neglected feature of plants.

The reason for this neglect has undoubtedly been the supposed simplicity of structure and functions of the cuticle. The present work dispels this misconception and, written in a concise and highly readable style, the description of the all-important boundary between the plant and the external environment fills a fair-sized book.

There are four main approaches. viz: methods of study, with special reference to electron microscopy; structure and development; chemistry, biosynthesis and decay; functions. So many aspects are covered that only a few can be specifically mentioned. The section on chemistry is well done and discloses the great variety of composition of the cuticle, cutinised and corky walls, including some mention of taxonomic significance. There is an important discussion of the basis of wetting and penetration by sprays, as well as an account of the interaction between micro-organisms and the cuticle. There is a good summary of recent ideas on the cuticular control of water loss, and of its significance in the environment. The bibliography is extensive and the book is well indexed. The general standard of production is high and the numerous excellent electron-micrography are very well printed.

A. R. A. NOEL

TURFGRASS SCIENCE ed. by A. A. Hanson and F. V. Juska, with pp. 715, 160 figures, 73 tables. Madison: American Society of Agronomy, 1969. $12.50.

This work is what the title suggests—a scientific treatise on turfgrass written by thirty-eight different authors and edited by two leading scientists from the famous American research station at Beltsville.

The introductory chapters on the history of turf usage and the turfgrass industry make one realise what a big business turf production has become in the United States.

There are most important and interesting discussions on climate and soils and the adaptation of different species and ecotypes of grasses to these in different parts of the country. Detailed discussions on the nutrition of turfgrasses and their fertiliser requirements are given together with the effects of mineral deficiencies and toxicity.

Soil water and its effect on turf are discussed and the irrigation management of turf, particularly the determination of the frequency and amount of irrigation—something of extreme importance in the management of golf and bowling greens—is dealt with.

The subjects of physiology of growth and ecology lead up to a very good discussion on management. Very useful sections follow on turf weeds, turfgrass diseases, many of which occur in South Africa, harmful insects and other pests and their control.

Species and strains of turfgrasses and their suitability in different parts of the United States are dealt with but little of this is applicable in South Africa. The same remarks apply to the chapters on turfgrass improvement and production of seed.

Seedbed preparation and planting, as described, is of much importance but, again, the conditions of climate under which they are carried out, do not necessarily apply to our South African conditions.

The management of putting greens, golf fairways and roughs, and highway roadsides is of fairly general application while the chapter on equipment for turf is most useful.

This book is a "MUST" for all students of turf and turf management. It is a first class textbook written in scientific and readable language. It is not just a handbook on "do's and don'ts" in management but it gives the whole scientific background for all practices in turf management. Committees of management for golf and bowls clubs would do well to acquire and study the book.

J. D. SCOTT